



2012

Psychology GA 1: Written examination 1

GENERAL COMMENTS

This examination was the final Unit 3 June examination for the *VCE Psychology Study Design*. From 2013, a single examination covering both Units 3 and 4 will be held in November.

As the paper is assessed online, students are reminded to write within the marked boundaries on the paper for each question. They should also clearly indicate if a response is continued in the extra pages provided at the end of the response booklet.

As in previous examinations, many students missed out on marks because they did not answer the question asked or failed to address the scenario outlined.

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	% No answer	Comments
1	1	3	1	95	0	
2	79	5	11	6	0	
3	3	11	2	83	0	
4	9	81	2	8	0	
5	5	4	89	2	0	
6	10	2	55	33	0	It is very unlikely that significant and dramatic mood changes (option D) will be experienced. It is probable that the participants' mood will be depressed, but changes of mood are more likely to be gradual.
7	3	13	57	26	0	Research clearly shows that performance on simple tasks is most adversely affected by sleep deprivation.
8	10	72	15	3	0	
9	6	4	4	85	0	
10	2	8	15	76	0	
11	18	6	21	53	1	This question addressed knowledge of brain imaging techniques, sleep and brain function. Options A and B cannot be correct because CT and MRI scans examine structure rather than function. Option C was incorrect because activation of the RAS would indicate REM sleep.
12	2	86	9	2	0	
13	70	9	13	8	0	
14	78	4	12	6	0	
15	4	78	10	7	0	
16	4	80	11	5	0	
17	11	6	39	42	1	Students who chose option C (the left hemisphere is responsible for spatial reasoning and identifying objects) should remember that the left hemisphere is not responsible for spatial reasoning and this could not be inferred from the results given.
18	98	1	1	0	0	
19	69	26	4	1	0	

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Question	% A	% B	% C	% D	% No answer	Comments
20	79	4	12	6	0	
21	3	6	85	6	0	
22	59	25	6	10	0	A CT scan (option A) is much more cost-effective than an MRI scan (option B) in this instance.
23	9	56	14	20	0	The hippocampus is involved in the formation of declarative memories. Only new procedural memories (option B) would be formed.
24	55	14	21	10	0	Putting a word into a sentence leads to encoding according to meaning; this is therefore semantic encoding.
25	6	83	1	11	0	
26	61	2	35	2	0	Debriefing occurs after research.
27	4	12	18	66	0	
28	71	16	7	5	0	
29	1	15	84	0	0	
30	2	2	10	86	0	
31	20	47	12	20	0	Only new procedural memories can be formed; options A, C and D represented declarative memories.
32	80	5	11	3	0	
33	5	6	83	5	0	
34	3	16	63	18	0	
35	45	21	1	34	0	It is not possible to encode nonsense syllables using narrative chaining (option A) as this requires items to be incorporated into a meaningful story.
36	24	48	12	16	0	Names can be encoded by associating them with items already in the semantic network. Forgetting would therefore be slower than for the nonsense syllables.
37	7	73	13	7	0	
38	8	8	72	12	0	
39	8	86	5	1	0	
40	27	20	52	1	0	The savings score refers to a decrease in either time or the number of trials required to learn information a second or subsequent time.
41	7	69	8	16	0	
42	15	8	59	18	1	
43	2	1	66	30	0	
44	70	15	12	3	0	
45	1	34	5	60	0	Option D cannot be correct as the independent variable is deliberately manipulated by the researcher; this ensures that the control group and experimental group experience different conditions.



Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Question 1a.

Marks	0	1	Average
%	26	74	0.8

REM sleep

Question 1b.

Marks	0	1	2	Average
%	23	29	48	1.3

When allowed to sleep naturally, on the sixth night they would experience a greater than normal proportion of REM to NREM sleep; this is to make up the REM sleep that was missed.

Many students confused REM sleep with Stage 1 NREM. Others stated REM Stage 4, but this was incorrect.

Question 2

Marks	0	1	2	Average
%	59	13	28	0.7

Content of a daydream is less controlled and more varied compared to meditation. (A daydream can be nonsense, illogical, disorganised and have many ideas. The content of meditation is controlled, eliminates most thoughts and focuses on a single – internal or external – stimulus.)

There were many students who discussed meditation as being deliberate while daydreaming is involuntary, and these students failed to address the question. The question stipulated ‘...content limitations’ as the basis for comparison, not self-control.

Question 3a.

Marks	0	1	2	Average
%	16	26	57	1.4

- In an altered state of consciousness, level of awareness may be reduced compared to normal waking consciousness.
Eric could ask Jason questions such as, ‘Can you tell me where we are?’ If Jason answers correctly, he is probably not in an altered state of consciousness.
- In an altered state of consciousness, perceptual and cognitive distortions may occur. Eric could ask Jason questions such as, ‘How many fingers am I showing you?’ If he answers correctly, he is probably not in an altered state of consciousness.
- Other characteristics could include:
 - time orientation
 - change in emotional awareness
 - change in self-control
 - change in content limitations.

Any appropriate physiological characteristic was acceptable for this question.

This question was generally well answered. The main confusion occurred when students identified the cues as being state-dependent and did not refer to context. Students are reminded that ‘time orientation’ refers to awareness of the passage of time.

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Question 3b.

Marks	0	1	2	Average
%	34	12	53	1.2

Test: EEG

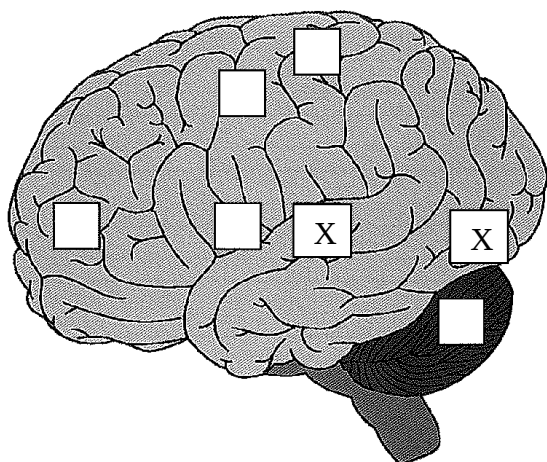
Description: An EEG would measure Jason's brainwaves or electrical activity of the brain (if they showed beta/alpha and Jason appeared awake then he is not in an altered state of consciousness).

GSR, heart rate, body temperature, PET, SPECT, fMRI (thermometer, ECG, EKG, EMG, stethoscope, reaction time etc.) were also acceptable.

Many students suggested that an EEG measures '...electrical conductivity of the brain'; however, this is incorrect.

Question 4a.

Marks	0	1	Average
%	53	47	0.5



Students were required to identify the primary auditory cortex in the temporal lobe and the primary visual cortex in the occipital lobe.

Question 4bi.

Marks	0	1	2	Average
%	54	34	12	0.6

Synaesthesia is a perceptual anomaly in which stimulation of one of the senses (or a cognitive process) also causes a perceptual experience in another sense (or creates another cognition).

The two most common errors were when students simply gave a description of a specific form of synaesthesia or made statements that '...synaesthesia occurs when we experience two sensations at once...' – this is quite normal and we do it all the time.

Question 4bii.

Marks	0	1	2	Average
%	70	19	11	0.4

Infant brains contain neural connections between two primary sensory cortices (primary auditory cortex or temporal lobe and the primary visual cortex or occipital lobe). Usually these connections are 'pruned' during childhood. If this pruning does not occur, visual-auditory synaesthesia may occur.

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Question 5

Marks	0	1	2	3	Average
%	43	26	21	10	1

Memory characteristic	Healthy elderly adult	Healthy young adult
CNS function	slower than when younger	faster neural transmission
confidence in ability	lower than when younger	higher
motivation	lower than when younger	higher
myelination	myelin loss (decreased insulation/efficiency of neural transmission)	myelination complete
measure of memory	recognition superior to recall	recall equal to recognition

This question required students to make a comparison. As in the table above, it was essential that they show the specifics for healthy young adults and for healthy older adults in order to compare.

Many students discussed dementia or physiological decay, ignoring the wording of the question.

Question 6

Marks	0	1	2	3	Average
%	27	10	12	51	1.9

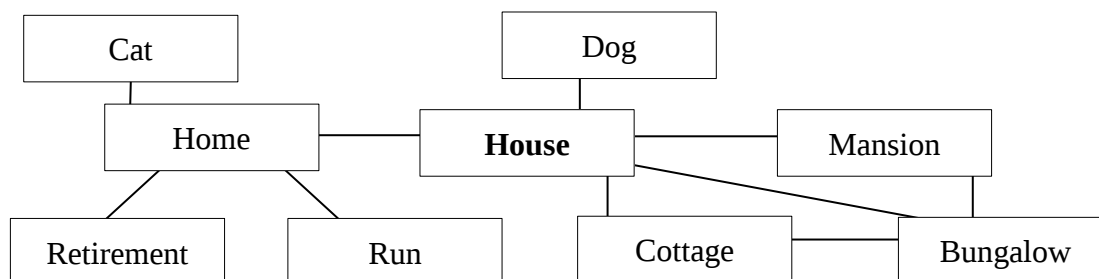
Superior recall for items at the beginning of the list indicates effective transfer into long-term memory (primacy effect). Superior recall for items at the end of the list indicates items still in short-term memory – (recency effect).

Generally this question was well-answered; however, some students discussed Ebbinghaus' forgetting curve rather than the serial position effect.

Question 7

Marks	0	1	2	3	Average
%	44	15	32	9	1.1

The diagram below shows a semantic network for the central concept 'House'. The individual concepts are nodes joined by links and arranged in a hierarchical structure. Many students described a linear, rather than hierarchical structure, and were therefore not awarded any marks.



Question 8a.

Marks	0	1	Average
%	39	61	0.6

The tip-of-the-tongue phenomenon is when a person knows they know something but cannot retrieve it (remember or recall it) at that moment.

Some students tended to be inexact in their responses; for example, stating that 'the tip-of-the-tongue phenomenon refers to the inability to recall something'.

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Question 8b.

Marks	0	1	2	Average
%	33	61	5	0.7

The tip-of-the-tongue phenomenon helps to support the retrieval failure of forgetting because (two of):

- often information stored in long-term memory can only be accessed with an appropriate retrieval cue
- it demonstrates partial retrieval, suggesting that retrieval from long-term memory is not all or nothing
- information is stored in long-term memory in an organised and interconnected way, and a retrieval cue will eventually connect to the correct information.

Question 9a.

Marks	0	1	2	3	Average
%	13	16	27	44	2.1

Because Liz was very traumatised she wanted to forget, and so when asked, she is still suppressing the memories.

Repression was incorrect; the words 'Liz has preferred' in the question disqualifies this.

Question 9b.

Marks	0	1	2	Average
%	41	44	15	0.8

Loftus indicates that memories are reconstructed over time; therefore William's memories in court were altered by giving the earlier statement and by revisiting the event in his mind.

Many students failed to compare the reconstructed memory with the original.

Question 10

Marks	0	1	2	Average
%	44	19	37	0.9

'State' is equivalent to the person's internal environment; therefore, if Theo was nervous/drunk/excited at the time of learning this would act as a cue if in a similar state – nervous/drunk/excited when performing.

Many students indicated that Theo should perform in front of his friends and relatives at home but this was context-dependent. However, if they wrote '... so that he will be as anxious/nervous at home as he is when on stage...' this was state-dependent.

Question 11

Marks	0	1	2	Average
%	44	21	35	0.9

Right parietal lobe

The individual fails to notice (or ignores) the left side of the body or environment.

'Fails to see/hear, etc. ...on the left side' was not correct.

Section C – Extended answer question

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	7	10	16	18	18	14	9	5	2	1	0	3.5

Students are reminded that while spelling errors are not penalised, the meaning of what they write must be clear and unambiguous.

Students should ensure they read questions carefully and address all question parts. This was vital information and guided the marking. Students who addressed only one of the four dot points could not obtain high marks.

Following is an example of a possible response.

Introduction

This research aims to investigate the effectiveness of using mnemonics to improve memory. The independent variable will be 'use of acronyms' (IV condition 1) vs. 'no mnemonic strategy' (IV condition 2). The



dependent variable will be 'Memory ability', operationalised as % psychology terms correctly recalled after 15 minutes of learning.

Research hypothesis: 'That secondary school students will show increased memory ability when using an acronym mnemonic than when using no particular memorising strategy.'

Method

Participants

Volunteers from 20 Year 11 English students at a secondary college

Procedure

Maria will inform participants of the aim(s) of the research, the procedures that they will need to undertake, any risks involved and their right to withdraw at any time. She will also advise them that they will be debriefed after the research is completed.

A repeated measures design will be used in which students will attend two experimental sessions: on one occasion they will be in IV condition 1 and in the other in IV condition 2.

Counterbalancing will be used to compensate for the possible confound of order effects (half will be in IV condition 1 at time 1, and half in IV condition 2 at time 1).

Materials

A list of psychological terms – students learn for 15 minutes

A test of psychological terms – to collect quantitative data on the dependent variable

Ethical considerations

Informed consent from guardians/parents was required for participants under 18 years old.

The following assessment criteria were used to allocate marks.

- identify and describe the key terms/theories/issues
- explain the relevant terms/theories/issues and make connections between psychological concepts and data and research
- use appropriate examples and evidence to support the response
- interpret and analyse the issues/data/information
- evaluate issues/data/information and draw appropriate conclusions

Students did not need to give their responses in essay form; dot points or tables covering some or all aspects of the question were acceptable.

Some students did not make any real attempt to answer the question and did not obtain any marks. A large number of students wrote extensively on only one or two of the dot points in the question and ignored the other requirements. The dot points were included in the question in order to assist students in structuring their responses. Many students wrote several pages addressing only ethical considerations.

Students still seem to be unaware of the distinction between a 'variable' and an 'operationalised variable'.

The rubric below provides a guide to the allocation of marks.

Excellent response Completes most points correctly and appropriately. Relates and integrates each point into the research investigation in detail.	• correctly identifies and describes an appropriate mnemonic device as well as a clearly operationalised dependent variable • writes an appropriate testable research hypothesis that includes the population and the predicted direction of influence of the independent variable on the dependent variable • explains in detail one or more ethical considerations relevant to this study and gives examples as to how they may be addressed • selects an appropriate experimental design for this research that shows an ability to draw appropriate conclusions and make decisions about the best research design. Shows an understanding of extraneous variables and explains the importance of
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	these in terms of the research scenario. Explains how the possible extraneous variables could be minimised in this research selects a method of data collection that demonstrates a knowledge of the possible options, justifies the use of this method in this research, and which is appropriate to the specific research investigation and in line with the experimental design
Very good response Completes most points correctly and appropriately. Relates each point into the research investigation.	- correctly identifies and describes an appropriate mnemonic device as well as a clearly operationalised dependent variable - writes an appropriate testable research hypothesis that includes the population and the predicted direction of influence of the independent variable on the dependent variable - explains in detail one or more ethical considerations relevant to this study and gives example(s) as to how they may be addressed - selects an appropriate experimental design for this research that shows an ability to draw appropriate conclusions and make decisions about the best research design. Shows an understanding of extraneous variables and explains the importance of these in terms of the research scenario. Explains how the possible extraneous variables could be minimised in this research - selects a method of data collection that demonstrates a knowledge of the possible options, justifies the use of this method in this research, and which is appropriate to the specific research investigation and in line with the experimental design
Average to above average response Completes some points correctly. Makes some relevant connections to the research investigation.	- correctly identifies and describes an appropriate mnemonic device and how it is to be operationalised, as well as a clearly operationalised dependent variable - writes an appropriate testable research hypothesis that includes the population, the predicted direction of influence of the independent variable on the dependent variable - explains in detail one or more ethical considerations relevant to this study and gives example(s) as to how they may be addressed - selects an appropriate experimental design for this research that shows an ability to draw appropriate conclusions and make decisions about the best research design. Shows an understanding of extraneous variables and explains the importance of these in terms of the research scenario. Explains how the possible extraneous variables could be minimised in this research - selects a method of data collection that demonstrates a knowledge of the possible options, justifies the use of this method in this research, and which is appropriate to the specific research investigation and in line with the experimental design
Below average response Completes some of these points correctly. Makes few relevant connections to the research investigation	- shows an understanding of mnemonic devices and mentions specific devices that may be under consideration in this research investigation. Identifies an independent variable and a dependent variable - attempts a testable research hypothesis - shows some understanding of ethical issues - shows some knowledge of experimental designs - indicates some extraneous variables and attempts to describe a minimisation of them - describes a method of data collection
Poor response (demonstrates one or two of these points correctly)	- shows some understanding of mnemonic devices - identifies the independent variable and dependent variable - attempts to write a research hypothesis - lists one or more ethical issues - mentions a method of data collection - shows some knowledge of experimental designs - indicates some extraneous variables and attempts to describe a minimisation of them
No attempt or irrelevant response	Makes little or no attempt to answer the question